20

5





## **CLAIMS**

We claim:

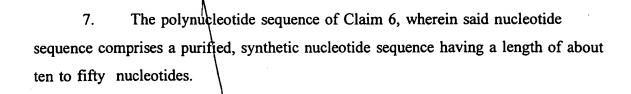
- 1. A substantially purified peptide comprising the amino acid sequence selected from the group consisting of SEQ ID NOS:71, 73, 75, 77, 79, 82, 83, 83, 85, 86, and 101.
- 2. A purified, isolated polynucleotide sequence encoding the polypeptide of Claim 1.
- 3. The polynucleotide sequence of Claim 2, wherein said polynucleotide hybridizes specifically to telomerase sequences, wherein said telomerase sequences are selected from the group consisting of human, *Euplotes aediculatus*, *Oxytricha*, *Schizosaccharomyces*, and *Saccharomyces* telomerase sequences
- 4. The polynucleotide sequence of Claim 3, comprising the complement of a nucleic acid sequence selected from the group consisting of SEQ ID NOS:70, 72, 74, 76, 78, 80, 81, and 100, and variants thereof.
- 5. A polynucleotide sequence that hybridizes under stringent conditions to a nucleic acid sequence selected from the group consisting of SEQ ID NOS:66, 69, 80, and 81.
- 6. The polynucleotide sequence of Claim 5, wherein said polynucleotide sequence is selected from the group consisting of SEQ ID NOS:70, 72, 74, 76, 78, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 102, 103, 104, 105, 106, 107, 108, 109, and 110.

5

10

15

20

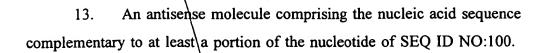


- 8. A method for detecting the presence of polynucleotide sequences encoding at least a portion of human telomerase in a biological sample, comprising the steps of:
  - a) providing
  - i) a biological sample suspected of containing nucleic acid corresponding to the polynucleotide sequence of SEQ ID NO:100;
  - ii) the nucleotide sequence of SEQ ID NO:100, or a fragment thereof;
  - b) combining said biological sample with said nucleotide under conditions such that a hybridization complex is formed between said nucleic acid and said nucleotide; and
    - c) detecting said hybridization complex.
- 9. The method of Claim 8, wherein, said nucleic acid corresponding to the nucleotide sequence of SEQ ID NO 100 is ribonucleic acid.
- 10. The method of Claim 9, wherein said detected hybridization complex correlates with expression of the polynucleotide of SEQ ID NO:100 in said biological sample.
- 11. The method of claim 8, wherein, said nucleic acid corresponding to the nucleotide sequence of SEQ ID NO:100 is deoxyribonucleic acid.
- 12. The method of Claim 11, wherein said detecting of said hybridization complex comprises conditions that permit the detection of alterations in the nucleotide of SEQ ID NO:100 in said biological sample.

5

10

15



- 14. A pharmaceutical composition comprising the antisense molecule of Claim 13, and a pharmaceutically acceptable excipient.
- 15. The polynucleotide sequence of Claim 4, wherein said nucleotide sequence is contained on a recombinant expression vector.
- 16. The polynucleotide sequence of Claim 15, wherein said expression vector containing said nucleotide sequence is contained within a host cell.
- 17. A method for producing a polypeptide comprising the amino acid sequence of SEQ ID NO:101, the method comprising the steps of:
  - a) culturing the host cell of Claim 16, under conditions suitable for the expression of the polypeptide; and
    - b) recovering the polypeptide from the host cell culture.
- 18. A purified antibody which binds specifically to a polypeptide comprising at least a portion of the amino acid sequence of SEQ ID NO:101.
- 19. A pharmaceutical composition comprising the antibody of Claim 18 and a pharmaceutically acceptable excipient.
- 20. A method for detecting the expression of human telomerase in a biological sample comprising the steps of:
  - a) providing:
  - i) a biological sample suspected of expressing human telomerase protein; and
    - ii) the antibody of Claim 18;

20

- b) combining said biological sample and said antibody under conditions such that an antibody:protein complex is formed; and
- c) detecting said complex wherein the presence of said complex correlates with the expression of said protein in said biological sample.